

REMARKS

Claims 37-46, 50-51 and 55-61 are in this application. Claims 1-36, 47, 48, 49, 52, 53 and 54 are cancelled. Claims 55 to 61 are being added.

The Applicant, in the course of long-term studies on the properties, structure, and the primary sequences of the full-size protein of peroxiredoxin (Prx6), discovered and identified that N-terminal fragment (delta Prx6) having a length of 177 amino acids possesses the antioxidant activity that is comparable with the Prx6 activity. The tertiary structure of such proteins is not well-studied and the properties of fragments are not obvious, since a molecule may consist of several complementary domains having different functions and the tertiary structure of the fragment or section of the full size protein may be altered when it is not part of the larger molecule.

It was not known in the prior art that

- (a) fragments of peroxiredoxin may possess the antioxidant activity;
- (b) a fragment having a length of 177 amino acid residues will appear the optimum;
- (c) a fragment having a length of 177 amino acid residues will possess the antioxidant activity;
- (d) such fragments can be the N-terminal fragment of the full molecule;
- (e) a delta Prx6 fragment may be prepared not only by simple cleavage of the Prx6 protein structure, which could result in decreasing the activity thereof, but also by genetic construction and generation of a recombinant protein in corresponding cells; and
- (f) a recombinant delta Prx6 fragment of Prx6 protein will not possess cytotoxicity but will possess the antioxidant activity comparable with the activity of the full molecule.

A delta Prx6 fragment claimed has been characterized, the characteristic features thereof are provided in the Description. Also, the Description provides a method for preparing the fragment and the therapeutic properties thereof, which support the use thereof.

The prior art technical solutions concerned mainly stimulating the synthesis of peroxiredoxin in mammals cells. The prior studies disregarded the fact that a disease is

associated with a lysis of cells and the cells can not provide the efficient synthesis of peroxiredoxin.

Thus, the inventors are of opinion that the claimed invention is novel and offers an inventive step since there is no one information source known to them that discloses the sequence SEQ ID NO:4 and describes the properties thereof. Based on state of the art, it is impossible for one skilled in the art to predict that a particular sequence having a length of 177 a.b. will possess the antioxidant activity.

Respectfully submitted,

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